



# CONNECTING ONLINE VISUAL MERCHANDISING AND CONSUMER RESPONSE BEHAVIOUR

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## ABSTRACT

The current study was designed to examine the relationship of online visual merchandising and consumers' emotions (pleasure and arousal) that in turn influence consumer response behaviors for this the study will apply Stimuli (S)—Organism (O)—Response (R) model suggested by Mehrabian and Russell (1974) as a base to relate these elements in which online visual merchandising will be the Stimulus, Emotional State will be the Organism and Approach-Avoidance behaviour will be the Response. This study takes two emotional variables i.e. Pleasure and arousal. The purpose of this study is to also explore different online visual merchandising (OVM) elements. The paper through extensive literature on Online Visual Merchandising and Factor Analysis gives five elements of OVM that affects consumer response behaviour. The factors exacted were Atmospheric, Website navigation, Product demonstration, Web graphics and Web advertising. There are various sub-elements included within these factors. A convenience sample of 200 online purchasers was selected. This study presents a detail understanding of online visual merchandising and its elements and how they are used differently in different websites. The paper also gives implications for retailers of how to use online visual merchandising to attract consumers. The findings of the study provides valuable information for online retailers developing successful online stores using various web cues that may attract both online browsers and purchasers. The paper also extends online visual merchandising research by empirically investigating how various web cues presented in websites influence consumer emotions that in turn affect consumer response behaviour.

**KEYWORDS:** Online visual merchandising, approach-avoidance behavior, S-O-R model, pleasure and arousal state.

## INTRODUCTION

Globally, one phenomenon that has been growing at a fast pace is internet shopping, as shoppers are now easily able to find product information on internet (Ward and Lee, 2000).

Past researches have suggested that website design and merchandising attract internet shopping customers and influence their satisfaction (Harris, 1998; Szymanski & Hise, 2000). In addition Menon & Kahn,( 2002) proposed that website that creates pleasure for customers has a positive effect on their approach behaviour and also makes the customers return to the website more often (Rice, 1997). Thus, it is clear that in online context also visual merchandising is an important tool for creating a positive impact to attract the customers. Whereas, there are still a lot of customers who still avoid purchasing online especially apparels as they cannot try the size and fit of a garment. Thus, it is very important for the online retailers to give such kind of feel to the customers visiting their websites such that it satisfies the need of sensory experience and physical inspection of the customers. For this purpose the online websites need to focus on developing excellent online visual merchandising techniques (Khakimjanova & Park, 2005).

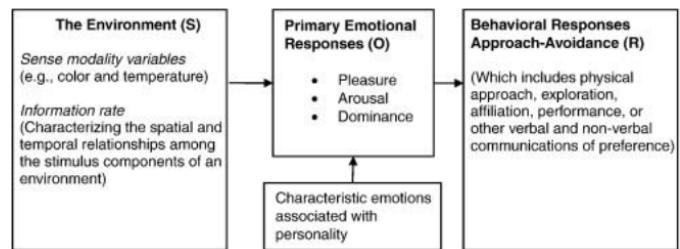
In the context of online shopping, visual appeal on the screen is one of few ways to communicate information to consumers; hence there is a need to discover which visual merchandising elements have major effect on consumers' shopping behavior in such environments. However, there is still need for research about online visual merchandising elements relationship with consumer behavior in a systematic and organized manner. Further that apparel cannot be physically experienced online; Internet shopping is a riskier way to purchase apparel products than in-store shopping. Therefore, in this context, it is necessary to understand whether or not online visual merchandising of websites have an impact on consumers' emotions (pleasure and arousal) that in turn influence the response behaviors. Thus, this topic holds immense relevance.

Moreover, in international scenario this subject is a critical area in retailing but is in a nascent stage in India. Hence, research on online visual merchandising holds immense relevance in Indian context as very less work has been done on this perspective.

## LITERATURE REVIEW

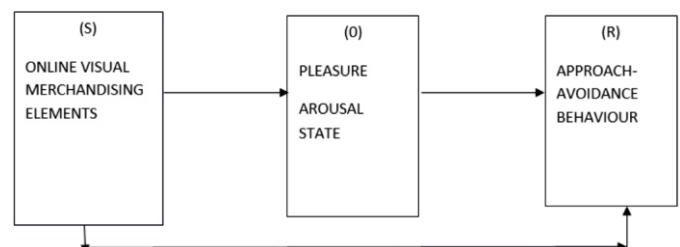
### Application of the Stimulus-Organism-Response framework to the current research

Mehrabian and Russell proposed the S-O-R model as an approach to environmental psychology. Mehrabian and Russell (1974) considered the sensory variables and information rate in the environment as the stimulus. The paper stated that an individual's character will have an effect on the affective state, which then results in approach-avoidance response behavior (Mehrabian and Russell, 1974) (see figure 1).



**Figure 1. Stimulus-Organism-Response Model**  
(Mehrabian & Russell, 1974, p.8)

Online visual merchandising elements were chosen and organized based on a review of past studies as the stimuli which are also the independent variables. Emotional variables i.e. Pleasure and Arousal were included in the organism part. In the response part, the approach and avoidance behavior variable was used in this research.



**Figure 2: Stimulus-Organism-Response Model of current study**

### The emotional state.

Previous studies have given various dimensions about consumer based emotions, but most commonly used one suggested by various researchers were- pleasure, arousal and dominance, which were known as the PAD dimensions of emotional state (Mehrabian & Russell, 1974 ;Babin & Attaway, 2000).

However Eroglu et al., (2001) proposed that pleasure and arousal are more widely used dimensions to measure consumers' emotional state in visual merchandising. Pleasure is define as "the degree to which a person feels good, joyful, happy, or satisfied in a situation," whereas arousal implies "the degree to which a person feels stimulated, active, or alert" (Menon & Kahn, 2002).

As per Eroglu et al., 2003; Fiore et al., 2005; Menon & Kahn, 2002, website environment such as background color of the website, text color, animated logo and image interactivity influence consumers' pleasure and arousal while they are browsing the websites. Eroglu et al. (2003) also found that there is a positive effect for atmospheric web elements on consumer emotions (pleasure and

arousal) in the apparel online shopping context.

Hence, Hypothesis H<sub>1</sub> has been stated as:

**H<sub>1</sub>: Online visual merchandising affects pleasure and arousal consumer's state.**

According to findings from various psychologists, pleasure state can lead to more approach behavior and stimulation-seeking in the next task (Menon & Kahn, 2002). Donovan & Rossiter, 1982; Holbrook & Gardner, 1993 also concluded that consumers' approach or avoidance to the environment is affected by their emotional responses. In addition, according to Mehrabian and Russell (1974), high arousal would result in approach behavior in a pleasant environment while it would also lead to avoidance behavior if the environment is unpleasant.

Therefore, Hypothesis H<sub>2</sub> has been structured as:

**H<sub>2</sub>: Consumers' emotional state (pleasure and arousal) influence approach-avoidance behavior.**

**CONSUMER BEHAVIOUR**

Turley and Milliman's (2000) studied about other researches and found that past research explored not only many stimuli but also a extensive variety of behavioral responses such as time spent by the customer in the store, total sales of the store and impulsive buying behavior in retail environments. However, in general, buying behaviour is all about positive response and negative response. According to scientific psychology, approach behavior is "instigated or directed by a positive/desirable event or possibility," whereas avoidance behavior is "instigated or directed by a negative/ undesirable event or possibility" (Elliot & McGregor, 1999; Elliot & Thrash, 2002). In environmental psychology, approach behaviors are those positive responses to an environment while avoidance behaviors are lesser time spent in the environment (Turley & Milliman, 2000).

Hence, approach-avoidance behavior is an effective way that can describe consumers' shopping behavior.

Ha and Lennon (2010) examined that visual merchandising elements especially low task relevant elements can directly increase consumers' approach behavior. In addition, Manganari, Siomkos, Rigopoulou, and Vrechopoulos (2009) suggested a conceptual framework for studying the impact of online store atmosphere on consumer behavior based on the Virtual Component Presentation Framework (VCPF) which was earlier propose by Vrechopoulos, O'Keefe, Doukidis and Siomkos (2004).

In addition Eroglu and Machleit (1990) argued that overloading the retail density can negatively affect consumers' internal states and consequent shopping behaviors and outcomes of the customer. Similar to product density in physical stores stores, Soiraya, Mingkhwan and Haruechaiyasak, (2008) found that online retailing websites with good image alignment and text density can performance in a better matter. Kim et al.,(2010) also investigated consumers' preference for models' faces. Research in website design has shown that layout of online website, font type it is using, word style and color background are all important to consumers' response behavior (Hill & Scharff, 1997; Mandel & Johnson, 1999; Wu & Yuan, 2003; Griffith, 2005; Yoo, 2010; Biers & Richards, 2011).

Hence, Hypothesis H<sub>3</sub> has been stated as:

**H<sub>3</sub>: Online visual merchandising affects consumer response behavior.**

**RESEARCH METHODOLOGY**

The study has been conducted on the basis of primary data, which has been collected through a structured questionnaire. The data was collected from 200 respondents from Mumbai and Delhi and who had made a purchase or even visited the two websites i.e. Flipkart and Snapdeal. The questionnaire was framed using a seven point Likert Scale consisting of statements covering three dimensions viz; Online Visual Merchandising elements, Pleasure-Arousal State and Approach-Avoidance Behaviour of the customers towards websites. All the dimensions were measured on a scale of 1 to 7, where 1 represents Strongly Disagree and 7 represents Strongly Agree. The data so collected was summarized and analysed using SPSS Statistics 24. Regression analysis and ANOVA was conducted for the hypotheses testing.

Various dimensions of online visual merchandising were identified through extensive literature review namely Atmospheric, Website navigation, Product demonstration, Web graphics and Web advertising. There are various sub-elements included within these factors. The Atmospheric factor includes items such as Color of the website, text of the website and layout of the website. The product demonstration and web graphics included the sub factors like Product Density (Number of pictures and space arrangement of the page), Model Appeal (Attractiveness of the model used to showcase the products), Product Image Quality and Product Presentation (when you play your mouse over the picture and the interactivity of changing picture). The web navigation includes Ease of use and Flexibility of a site and at last web advertising consists of banner ads (a picture with advertisement slogan on it) and promotional text on the website.

**HYPOTHESIS TESTING**

**H<sub>1</sub>: Online visual merchandising affects pleasure and arousal consumer's state.**

Hypothesis 1 states that all the online visual merchandising elements namely Colour, Layout, Product Density, Model Appeal, Product Image quality, Product Presentation, Banners and Ease of Use can predict both customer's arousal and pleasure state. Two multiple regressions were conducted to understand how online visual merchandising elements affect customer's arousal and pleasure state. Tables below shows regression test statistics which consists of pleasure and arousal as dependent variables respectively.

**Table 1a and 2a** respectively shows that online visual merchandising elements have a significant impact on both Pleasure and Arousal state of online website users. But it is seen from **Table 1b and 2b** that not all online visual merchandising elements had an influence on pleasure and arousal. Only colour, layout and Product Presentation significantly predicted consumers' pleasure and in **Table 2b** only Product density, while Colour, Layout and product presentation had significant influence on arousal.

**TABLE 1a:  
ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1415.827	8	176.978	5.472	.000 <sup>a</sup>
	Residual	3719.359	191	32.342		
	Total	5135.185	199			

a. Predictors: (Constant), Ease of Use, Banners, Product Image Quality, Colour, Product Presentation, Model Appeal, Product Density, Layout

b. Dependent Variable: Pleasure

**TABLE 1b:  
Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	Colour	-.846	.298	-.288	-2.843 .005
	Layout	1.184	.343	.382	3.448 .001
	Product Density	.314	.290	.115	1.084 .281
	Model Appeal	.094	.306	.030	.307 .759
	Product Image Quality	-.107	.314	-.035	-.342 .733
	Product Presentation	.634	.217	.278	2.921 .004
	Banners	-.189	.220	-.077	-.860 .392
	Ease of Use	.162	.219	.070	.741 .460

**TABLE 2a:  
ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	994.755	8	124.344	5.164	.000 <sup>a</sup>
	Residual	2768.882	191	24.077		
	Total	3763.637	199			

a. Predictors: (Constant), Ease of Use, Banners, Product Image Quality, Colour, Product Presentation, Model Appeal, Product Density, Layout

b. Dependent Variable: Arousal

**TABLE 2b:  
Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	Colour	-.509	.257	-.203	-1.983 .050
	Layout	.681	.296	.257	2.298 .023
	Product Density	.312	.250	.134	1.249 .214
	Model Appeal	.075	.264	.028	.284 .777
	Product Image Quality	.528	.271	.203	1.948 .054
	Product Presentation	.377	.187	.193	2.012 .047
	Banners	-.107	.190	-.051	-.561 .576
	Ease of Use	-.134	.189	-.067	-.709 .480

a. Dependent Variable: Arousal

**H<sub>1</sub>:** Online visual merchandising affects consumer response behavior.

Hypothesis 2 states that all the online visual merchandising elements namely Colour, Layout, Product Density, Model Appeal, Product Image quality, Product Presentation, Banners and Ease of Use can affect customer's response behaviour. Multiple regressions were conducted to understand how online visual merchandising elements affect on customer's approach-avoidance behaviour towards website. Table below shows regression test statistics which consists of approach-avoidance behaviour as dependent variable.

**Table 3a** shows that online visual merchandising elements have a significant impact on approach-avoidance behaviour of online website users. But it is seen from **3b** that not all online visual merchandising elements had an influence on approach-avoidance behaviour. Only Product Image Quality and Ease of use can significantly predicted consumers' approach-avoidance behaviour.

**Table 3a:**  
ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	765.014	8	95.627	7.102	.000 <sup>a</sup>
	Residual	1548.373	191	13.464		
	Total	2313.387	199			

a. Predictors: (Constant), Ease of Use, Banners, Product Image Quality, Colour, Product Presentation, Model Appeal, Product Density, Layout

b. Dependent Variable: Approach Avoidance

**Table 3b:**  
Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.181	.3768		.844	.400
	Colour	-.134	.192	-.068	-.701	.485
	Layout	-.054	.222	-.026	-.243	.809
	Product Density	.290	.187	.159	1.550	.124
	Model Appeal	-.120	.197	-.058	-.609	.544
	Product Image Quality	.600	.203	.294	2.961	.004
	Product Presentation	.138	.140	.091	.990	.324
	Banners	.223	.142	.135	1.572	.119
	Ease of Use	.345	.141	.222	2.449	.016

a. Dependent Variable: Approach Avoidance

**H<sub>2</sub>:** Consumers' emotional state (pleasure and arousal) influence approach-avoidance behavior.

Hypothesis 3 tested whether consumers' emotional state (pleasure and arousal) influence their approach-avoidance behavior. This hypothesis was examined using one multiple regression testing the predicted effect of emotional state on consumers' approach and avoidance behavior. The results showed strong significant positive effect of arousal on approach and avoidance behavior.

**Table 4a:**  
ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	289.903	2	144.951	8.668	.000 <sup>a</sup>
	Residual	2023.485	197	16.723		
	Total	2313.387	199			

a. Predictors: (Constant), Arousal, Pleasure

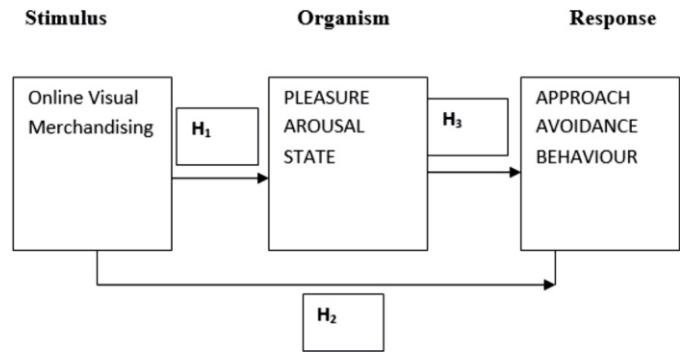
b. Dependent Variable: Approach Avoidance

**Table 4b:**  
Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	Pleasure	-.009	.075	-.013	-.121	.904
	Arousal	.284	.088	.363	3.246	.002

a. Dependent Variable: Approach Avoidance

Thus we can conclude that following model can be proposed from the above testing:



**Figure 3:** Stimulus-Organism-Response Model with reference to current study

**IMPLICATIONS**

Seven online visual merchandising elements were identified in the list, including Atmospheric, Online Product density, Model Appeal, Product Presentation, Website Navigation, Website Advertising and Online Product Image .

This research hypothesized that the aforementioned seven online visual merchandising elements predict consumers' emotional state (pleasure and arousal). The findings also revealed that there is a positive effect of pleasure, arousal on approach avoidance behaviour. This research also tested visual merchandising elements in online shopping environments which predict consumers' approach and avoidance behavior. Only Product Image Quality and Ease of use were significant for predicting consumers' approach-avoidance behavior at the 0.05 level thereby suggesting the retailers has to put extra effort on Product Image Quality and Ease of use to make consumers stay longer and browse more on the website.

It is to suggest that click/click and mortar studies being conducted in international scenario can also be put to use in Indian context. They would provide a more comprehensive understanding and knowledge of online visual merchandising techniques used in Indian websites.

The future study may also use consumers' purchase intention as the response variable in the S-O-R framework and test whether emotion state can affect the purchase intentions of online customers.

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